Note by LMB: This speech was the Keynote Address for the UPC Award ceremony in Barcelona, Spain, delivered November 2008. The Universitat Politècnica de Catalunya's *Premio UPC de Ciencia Ficción* is awarded annually for the best novella submitted to the contest in the English, French, Spanish or Catalan languages. It exists to increase awareness and interest in both science fiction, and in modern literature in the Catalan language.

My speech, needless to say, was written and delivered in English, with translations provided by the meeting's excellent organizers to the very-multi-lingual audience.

More information on the web at

http://bibliotecnica.upc.es/cienciaficcio/premi_upc/angles/presentacio.asp

Science Fiction, Fantasy, and Me

Hi there.

I'd like to thank the University for inviting me to give this keynote speech in this amazing city. On my first visit to the Iberian Peninsula, about eight years ago, I only saw a little slice, coastal Asturias and the region around Madrid. I knew the rest would have to be saved for later. But from the point of view of a human lifetime, there will never be more time later–there will always be less. So I'm glad for the chance to grab a bit of Barcelona.

One of the questions I am frequently asked in interviews, since I write in both genres, is, do I find any great difference between writing science fiction and writing fantasy? I find the answer falls into two parts, one about the mechanics of writing, which is easy to answer. And the other about the underlying differences between the two genres, which is much harder to explain.

The easy answer first. For me, the mechanics of writing are exactly the same. Most of my books begin with a few inner visions of characters and scenes, such as a road-worn man, weary beyond hope, approaching a castle in which he lived in his youth. Or another man dying by needle-gun fire on a shuttleport tarmac far from his

homeworld, to the horror of his young companion who had looked to him for protection. Or a hallucinating man lost in a vast technological catacomb, who is rescued by one of his hallucinations. Each of these visions comes with an implied world, sometimes one that has previously been developed, sometimes a fresh one demanding new development. The character, too, may be old and familiar or fresh and full of new possibilities waiting to be realized, because characters are created by their actions. (So are real people, come to think.)

At this point, I begin jotting notes, which are for me memory aids. I jot notes about the characters, the background, the setting, the proposed actions, and about future scenes that may or may not ever come to pass. At some point, these notes will reach a critical mass, and I will see where the book must start. I then write the opening scene or scenes, and then I have to sit back and think it all through again, because the writing will have changed some things–knocked loose new ideas or shown me that some elements don't actually belong in this story, and must be discarded. The hardest part of writing a novel is the tension of *remembering* it all, backwards; the act of writing allows me to release the inner vision onto the page, where it is finally trapped. This leaves room in my head to assemble the next, connected vision. The process is all very visceral, done by gut-feel.

I assemble details of the setting as the story passes through it; the story itself creates its world. This system has been dubbed "just-in-time worldbuilding." It means my story and its setting always fit each other, but it makes my universes rather un-sharable–I don't have a huge "universe bible" or set of formal notes about my fictional worlds. I only have what has been printed on the page plus what is still hiding in my head.

But really, I change the world every time I change viewpoint characters, which can sometimes be every scene in a multiple-viewpoint novel. Because each character is the center of his own universe, which stretches out from him equally in all directions as far as his eye can see. To write a new character, I must step into his or her body and mind and memories, put them on like a new skin, watch their world through *their* eyes. (And try to keep track of what height those eyes are seeing from!) Only when I have folded their whole world around them will I know what that character is next going to say and do.

I continue this cycle of creation and writing in fits and starts–I have fits, and then I start writing–as many times as I need until I reach the end of the book.

This writing process is just the same whether the setting is based on technology, some future extension of our world and so totally devoid of the supernatural in any form, or whether the setting includes magic, and is therefore some alternate Earth, as I had in *The*

Spirit Ring, or an entirely separate sub-creation, like Chalion or the world of *The Sharing Knife*.

As a writer, I see nothing odd in moving smoothly back and forth between these two genres. When I grew up in the 1960's and first imprinted on science fiction and fantasy, not only were they shelved together in libraries and bookstores, just as they are now, but many of my favorite writers were ambidextrous between the two genres. Poul Anderson, L. Sprague de Camp, Roger Zelazny, Robert Heinlein, later C.J. Cherryh, and even in his own strange way C.S. Lewis, embraced the whole range of possibility. It's only in recent years that writers are expected to specialize more in one or the other, pushed into a narrower and narrower creative path by market forces.

A lot of *readers*, however, process the two genres of fantasy and science fiction very differently, and this is where the answer, or rather, the argument, gets fiendishly complex.

Some people think the two genres are or should be utterly separate and separable things, an intellectually pure theory that I'm afraid breaks down very quickly in the face of the messy evidence. These people would only allow the most crystalline of so-called hard science fiction to enjoy the name–rigorous extrapolation that does not violate any known law of, usually, physics. (The same critics are often weaker in the bio-sciences, I notice.) They bag all the rest as fantasy. This is actually all right by me, as long as they don't then go on to complain, after redefining most of the genre out from under most of its readers, that their readership is too small. "When you choose an action, you choose the consequences of that action," as my character Cordelia says somewhere.

Others are dedicated fantasy-only readers, a stance that seems to be based partly on preferences for certain writing styles, emotional tones, or pre-modern settings, sometimes on a hunger for something called "the numinous", and sometimes, interestingly, on a rejection of the relentlessly dystopic visions some science fiction offers, a problem I will return to at the end.

A third group, of whom I am one, thinks that fantasy and science fiction are a continuum of story possibilities–the extreme ends may be readily distinguished from each other, but the middle is messy. And we *like* it that way.

The hard science fiction purists would like to disallow counter-factual physics, calling all the rest "science fantasy." As far as we now know, faster-than-light travel, anti-gravity, and psi powers are all impossible and are going to remain so. But a lot of these elements are more-or-less grandfathered in to the science fiction genre. Basically, anything that appeared in editor John W. Campbell, Jr.'s, *Analog Magazine* is here to stay. Which, happily, includes Anne McCaffrey's flying telepathic dragons–I read her first Pern story in *Analog* when I was a teen–and other tales even further into the fuzzy boundary.

All these elements are what I would call physically impossible, but not supernatural. Faster-than-light travel is a different *kind* of unreal than ghosts, vampires, mages, or gods. It's a little confusing that the same word, "fantasy" is often used for both. My own rule of thumb, as both reader and writer, is that the presence of the supernatural in any form moves a story squarely into the fantasy category, whether or not the tale also contains spaceships traveling at any speed.

But as ever, some of the most interesting stories, just like some of the more interesting sciences, explore the boundary conditions. Science fiction that jumps the fence into the unreal–as with faster-than-light or psi powers–gets pointed out all the time, but there is also some fascinating fantasy that strays into science fiction's territory in subtle ways.

One of the first of these I encountered long ago in, where else, the pages of 1960's *Analog*–the Lord Darcy stories, penned by Randall Garrett. These were a series of mystery stories and novels set in an alternate 1960's, where, back in the Middle Ages, King Richard the Lion-Hearted had not been killed in France, but instead recovered from his wounds and founded a Plantagenet dynasty that lasted into the twentieth century. In this world, magic was quantified and developed as a science, in place of or at least in competition with the sciences we know. The main characters were a Sherlock Holmes-like detective and his assistant, a forensic sorcerer. The tales developed many elements that were much-copied by later writers, including the alternate history and the use of magic as technology. But the most delightful element to me, as the stories built up, was their extended, if inverted, meditation on the history of science and the scientific method, as if seen in a mirror. It invited the reader to think about this aspect of *our* world–and take it much less for granted. You can't read the Lord Darcy stories and not end up thinking more carefully about where our technological world really comes from.

Traveling the same road in the opposite direction is C.S. Lewis's science fiction trilogy that starts with *Out of the Silent Planet*. This series has the trappings of science fiction–a first trip to Mars and a meeting with intelligent Martians, creatures one could still posit as possible back in 1938 when the book was first published. But Lewis used the trope as a vehicle for an extended meditation on his Christian theology, as his Martians were a race that was spiritually unfallen. The tale also includes some sharp critique of H.G. Wells-type materialism, in a sort of meta-literary dialogue.

I first read this book at about age fourteen, when I was indiscriminately sopping up the genre, and I found it immensely confusing, as I knew nothing about the theology at the time. Coming directly from such readings as *Rocket Ship Galileo*, I immediately assumed the men who had built the spaceship were the heroes, which

made this strange fellow Ransom who went along for the ride some sort of saboteur or traitor. This misperception made the plot seem very odd to my young mind. I blamed it on the book being British. It wasn't till I read *Out of the Silent Planet* again in my late twenties, having acquired more religious education in the meanwhile, that I realized I'd previously read the book *upside-down* in terms of the moral lesson it was trying to convey. It's probably the most extreme example I've experienced of the way a book is read being dependent on the mind of the reader–and of later re-readings changing a book–and so the mental whiplash was very good for me. I really need to read that book yet again one of these days, to see how much more it's mutated since then.

My own fantasy creation of the world of Chalion, with its five gods, was also informed by some modern thinking, in a backhanded way. The Chalionese pantheon consists of the Mother of Summer, goddess of mothers, ripening, medicine, and female fertility; the Son of Autumn, the god of young men, the hunt, the harvest, and war; the Father of Winter, god of fathers, justice, male fertility, and death in old age; the Daughter of Spring, goddess of young women and education; and the Bastard, god of all things out of season–all the leftover bits that don't fit in the prior tidy schema, including disasters, orphans, revenge, bastards (of course), souls rejected by all the other gods, and leap year day. I wanted the made-up religion of this medieval-style fantasy world to partake of two qualities of real-world religions: to genuinely serve human social needs, and to take mysticism seriously. This scheme stemmed partly from my reaction to the shallow or silly or hostile versions of religion set up in bad generic fantasy, and partly from my own readings in history and religion.

But I also wanted it to be different from any religion in our world's history, and more particularly I wanted it to resist dualism, which I think is a philosophical mistake that has created a lot of trouble over the centuries. So I made the gods five in number partly to echo structures in the real world such as the fingers of the hand, or the four seasons and the left-over bits, or the genders and life-stages of people, and partly because it was a number that could not be evenly divided.

Because, in the real world, good and evil are never found neatly divided; it's always a mix, like the oxygen and the nitrogen in the air. You can separate the two as a thought experiment into pure forms, but then you have to mix them back together when you return to thinking about reality, and some folks forget this step. An awful lot of the horrors of history have been committed by smart people trying to fit a messy reality into a too-tidy theory. And then, when it doesn't work, deciding not that their theory is wrong but that the data–that is, their neighbors–need to be chopped, or chopped up, to fit.

But the really different part of the religion of Chalion lies in its metaphysical or cosmological underpinnings. Because the gods of Chalion are not creator-gods, posited to come first, *a priori*. Instead, matter itself is *a priori*, and all life, including the gods, arise from it. This reflects a view of the world based on the 20th Century scientific notion of *emergent properties*. In this view, physics arises as an emergent property of the fundamental structure of the universe, chemistry arises from physics, biochemistry from chemistry, living structures from biochemistry, brain from less complex structures, and mind from the electro-chemical processes of the brain, in one continuous and unified flow. There is thus no division between body and mind or matter and spirit, and to think that there is, is a mistake or illusion.

This is not a new notion. One of the dialogues of Plato, which I read too long ago to remember in detail, has a young man arguing with Socrates for a model of mind generated by the body the way the music arises from a lyre. Which is a pretty good metaphor for how brain and consciousness really work, except now we are building an underpinning of reproducible evidence right down to the molecular level which explains exactly how. But Plato, being deeply into dualism, has Socrates argue the poor young man out of his actually-correct position. In the ensuing philosophical debate, as I dimly understand it, Neo-Platonism won for some centuries over the alternate view, a kind of proto-scientific approach advanced by the Aristotelians. Which makes me think somebody really ought to write an alternate history story taking as its start-point the notion that the Aristotelians won instead, and try to think through what might have happened differently. (No, I don't imagine that it would have made humanity any better-behaved. Or any worse-behaved, either.)

Anyway, for the theology of Chalion, I imagined that flow of emergent properties rising up one level more, and posit that my gods are an emergent property of all the minds of their world, both past and present. As such, they have evolved from their world and continue to grow and change with it. The five gods are also the only game in town for life-after-death, since they must perfectly remember you after your body stops working for you to continue. So the theology of Chalion contains an afterlife, not divided into heaven and hell, but just into continued, if altered, existence as part of the god-mind–or into a forgetting, and dissipation into nothingness.

Most of this cosmology is presented rather between the lines in the story, so I'm not sure how much of it makes it into the minds of most readers. I come closest to spelling it out explicitly in the sermon by the character dy Cabon, in Chapter 3 of *Paladin of Souls*. A careless reading that just slams the assumed template of generic fantasy over the text is likely to miss the scattered clues. But at least one alert reader was so kind as to dub the whole thing "speculative

theology," which pleased and amused me no end, so I have hope that some of what I was trying to convey actually gets across.

Eventually, I think the Chalion series ought to be a set of five books, one volume for each of the five gods and their concerns. If I ever get the chance to write the last two Chalion books, I'd like to explore the logical consequences of this cosmology at least a little further. It could be a "stretchy" pair of books, as a writer friend of mine is fond of dubbing projects that terrify their creators with a prospect of truly embarrassing public failure. We'll see.

There are two parallel terms used in fantasy and science fiction to describe a reaction in the reader to some of its most breathtaking art: "sense of the numinous" and "sense of wonder." They may be roughly defined as, firstly, in fantasy, the overwhelming awe that is felt in the presence of the holy, or of the spiritual realm; and secondly, in science fiction, the overwhelming awe that is felt in the face of the intricacy or splendors of the physical universe. I think these are two sides of one coin. At the climax of *The Curse of Chalion* my hero Cazaril undergoes direct, intense experience of the mind of his goddess. His response to this numinous event includes such enhanced wonder at the material universe that even the contemplation of a simple pebble is more than his mind can hold, till he calms down a bit. His heightened spiritual wisdom does not reject the material world, but instead fully appreciates its beauty and worth. This is the excitement of the scientist, yet placed in the heart of a fantasy tale.

One of the other major threads in the science fiction tapestry is, and has always been, contemporary political critique got up in science fiction clothing. This includes utopias, dystopias, and most near-future speculation, including all the "if this goes on" and cautionary tales. (This thread runs through fantasy as well, but I'll stick to science fiction here. Except to mention that an eleven-year-old girl who loves horses should not be allowed to pick up George Orwell's satire *Animal Farm* thinking it's a talking-animal story. That trauma lasted for *years*, let me tell you.) Anyway, such political science fiction is much relished by readers who are greatly excited about here-and-now political arguments, and much praised by critics of a like mind. At its best, it tackles issues that will be of compelling interest for decades after its publication. At its worst, it has a sell-by date shorter than yogurt, and risks becoming the sort of relentless thudding propaganda that I describe as: "The-beatings-will-continue-until-morale-improves school of social engineering."

All very well in its place, but it is the exact opposite of, and in fact annihilates, any sense of wonder.

I don't think it's a coincidence that the domination of the science fiction marketplace by bleak political tales, which tend to present science and technology as the problem and not the solution, has gone hand-in-hand with the loss of positive tales about science

and technology, and indeed, with the loss of tales featuring actual science or engineering, or scientists and engineers as the heroes.

In part the loss may be because the new science is hard for the average older writer to understand. Every month, I read my issue of *Scientific American*, a periodical full of news and articles about current science, not with the feeling that I'm keeping up, but that I'm falling ever further behind. Vast new fields of my own ignorance open before me every time I turn the page. The fact that I am turning a page, and not clicking through the website, is almost enough to date me. The banquet of new and accessible knowledge is amazing, but a bit overwhelming; facing this glut of information, I feel like a person who has been taken into a giant modern supermarket and been told she has to eat all the food on the shelves.

At a recent convention panel, American science fiction editor Shawna McCarthy had some interesting remarks on the growing popularity of fantasy over science fiction. She said, very roughly paraphrased, that about fifteen or twenty years ago, the New York science fiction editors started buying almost exclusively the sort of dark and bleak political science fiction so beloved by some critics. At the time, it seemed a proper reaction to the state of the field and of the world. The problem is that the next generation of writers, who grew up reading these selections, don't know how to write science fiction any other way but dark. Now, when the editors would like to see more positive tales, if only for a change of pace, there are none being submitted.

Over the same stretch of time, in parallel, the sales of written science fiction have dropped and dropped, and the sales of fantasy, less subject to this dystopic trend, have vastly outstripped it. It didn't sound as if she thought this was a coincidence.

Though the media science fiction that also presented an, on the whole, more optimistic view of the future also did well, it does have to be pointed out that media SF generally lags about twenty years behind the written in its concepts.

There is plenty of the true sense of wonder in today's real science–the morning I wrote this speech, I spent some time on NASA's website looking at the latest astonishing photos from the fly-by of Enceladus, a moon of Saturn. I don't know how many of you are familiar with the website *xkcd*, which bills itself as "A webcomic of romance, sarcasm, math, and language" but on it I found the "Boom-de-ah-dah" song, which led back to the video ad for the Discovery Channel, which is basically a paean to the sense of wonder. (http://xkcd.com/442/) More people have more access to more knowledge than ever before in history; the world's problems are vast, but so are the intellectual resources with which to tackle them. I see no reason for the genre that *invented* sense-of-wonder to mire itself in a sense of gloom twenty years past its sell-by date.

An earnest effort has been made by some publishers, who remember the sense of wonder the good old stuff brought them as young readers, to bring thirty- and forty-–and fifty-!–year-old science fiction classics back into print, in the hopes that they can perform the same service for a new generation. I think this is well-meant, but a little wrong-headed. What's really needed are exciting new stories in *this* generation's voice about *this* generation's science–stories to make eyes widen and jaws drop and readers breathe, *Wow! That's so cool!* Stories that make their writers' own future a source of fascination and not just fear. The diagnostic question is, does a story destroy joy in the world–or create it? I hope that at least some scientifically-literate younger writers will take up the challenge of such joyful creation.

Thank you.